ABSTRACT OF THE DISCLOSURE

Modulators respectively modulate baseband signals into IF signals having different frequencies. A multiplexer multiplexes the IF signals. An electrical-optical converter intensity modulates the multiplexed IF signals into optical signals. A local oscillation signal source outputs a predetermined local oscillation signal. An external modulator intensity-modulates the optical signal using the local oscillation signal. An optical branching portion branches the intensity-modulated optical signal and respectively outputs branched optical signals to radio base stations. An optical-electrical converter converts the optical signal into an electric signal, to obtain an RF signal by frequency-converting the IF signal. An antenna only transmits a component having a desired radio frequency extracted in a band filter from the RF signal to a subscriber terminal. Frequency conversion from the IF signal to the RF signal is thus optically performed, whereby the frequency or electrical-optical converter is shared among the radio base stations.